

IN THE CLAIMS

1-38. (Canceled)

39. (Previously Presented) A method comprising:
providing a sheet material having a wet pulp state; and
applying to said sheet material while said sheet material is in said wet pulp state a pattern of PEDT/PSS.

40. (Canceled).

41. (Previously Presented) The method of claim 39, wherein said sheet material comprises paper and a foil and said applying comprises applying said pattern of PEDT/PSS to said foil.

42. (Previously Presented) The method of claim 41, wherein said pattern of PEDT/PSS is at least partially applied to said foil as a printed image.

43. (Previously Presented) The method of claim 41, further comprising embedding said foil in said paper while said paper is in said wet pulp state thereof and wherein said foil comprises a first support foil provided with a metallization comprising sectional demetallizations covered by a at least a further layer comprising PEDT/PSS.

44. (Previously Presented) The method of claim 43, wherein said pattern of PEDT/PSS is applied as a bonding agent between at least said first support foil and said metallization and between said first support foil and said paper in said wet pulp state.

45. (Previously Presented) The method of claim 44, wherein a layer of PEDT/PSS is applied to said first support foil on the surface thereof opposite said metallization.

46. (Previously Presented) The method of claim 44, wherein said metallization is applied to one surface of said first support foil and the PEDT/PSS is applied as a layer on said metallization.

47. (Previously Presented) The method of claim 43, wherein said metallization is covered by a further support foil and at least one of the first and further support foils is covered by a layer of PEDT/PSS.

48. (Previously Presented) The method of claim 43, wherein the elasticity coefficient of the layer of PEDT/PSS is greater than the elasticity coefficient of said metallization.

49-61. (Canceled).

62. (Previously Presented) The method of claim 39 further comprising embossing said sheet material there thereby change a density of said a pattern of PEDT/PSS resulting from said applying.

63. (Previously Presented) The method of claim 39 further comprising imprinting said sheet material to thereby change a density of said a pattern of PEDT/PSS resulting from said applying.

64. (Previously Presented) The method of claim 39 further comprising testing homogeneity of said pattern of PEDT/PSS and then controlling said applying based upon results of said testing.

65. (Previously Presented) A sheet product obtained by the process comprising:
providing a sheet material having a wet pulp state; and
applying to said sheet material while said sheet material is in said wet pulp state a pattern of PEDT/PSS.

66. (Previously Presented) A method of using a sheet product obtained by the process comprising:

providing a sheet material having a wet pulp state;

applying to said sheet material while said sheet material is in said wet pulp state a pattern of PEDT/PSS; and

said method of using comprising determining whether regions of said product are electrically conductive.

67. (Previously Presented) The method of claim 66 wherein said determining comprising spacing a set of control channel elements from one another and moving said product adjacent said control channel elements, and further comprising alternatively energizing even and odd members of said set of control channel elements, thereby reducing cross talk in said control channel elements.

68. (New) The method of claim 39 further comprising applying to said sheet material an additional metallization layer formed from a material other than PEDT/PSS.

69. (New) The method of claim 68 wherein said additional metallization layer is applied to a side of said sheet material opposite the side to which said pattern of PEDT/PSS is applied.

70. (New) The method of claim 69 wherein said additional metallization layer is applied on said pattern of PEDT/PSS.

71. (New) The method of claim 39 further comprising providing a second sheet material and a second layer of PEDT/PSS, wherein said second sheet material and said sheet material are separated from one another by an additional metallization layer formed from a material other than PEDT/PSS, and wherein said sheet material and said second sheet material each contact said additional metallization layer.

72. (New) The method of claim 39 wherein said pattern of PEDT/PSS has thickness of 1 to 2 microns.

73. (New) A method comprising:
providing a sheet material having a wet pulp state, said sheet material having a first side and a second side; and
applying to said first side of said sheet material while said sheet material is in said wet pulp state a pattern of an electrically conductive polymer.

74. (New) The method of claim 73 further comprising applying an additional metallization layer to said sheet material.

75. (New) The method of claim 73 further comprising applying an additional metallization layer to said second side of said sheet material.